studio. (T28, pp. 5)[4]

61. The eight status lights essentially provide the studio with on/off indications. The channels are used to control functions remotely from the studio or to read numerical status. The uses and functions of the channels are entirely independent of the status lights. (TR 1525-1527; 1532-1534)

62. Since the Monticello station first went on the air in late October, 1994, Jukebox Radio has maintained two separate and independent TC-8 systems for the remote control of the Monticello station and the Fort Lee translator, one system for each of those stations. (T1, p. 10; TR 1501) Identical models of TC-8 remote control units were used for the remote control of both the Monticello station and the Fort Lee translator from the Dumont studio from the time that the Monticello station went on the air in October 1994 and were never replaced, and an identical model of TC-8 remote control unit was brought into the hearing room for demonstrations by Mr. Turro. (TR 1489-1490; T1, p. 10) The link between the Dumont studio TC-8 unit and the Monticello station was by a data path on the 56 Kbps landline which carried the Jukebox Radio program feed (T1, p. 10), and the link between the Dumont studio TC-8 unit and the Fort Lee translator initially was on a data path along WMG-499. (T1, pp. 11-12) Mr. Turro testified that has never maintained any remote control capability for the Pomona translator. (T1, p. 10)

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[4]Mr. Turro provided live demonstrations during the hearing of the operations of TC-8 remote control systems actually in place for Jukebox Radio controlling the Monticello station (TR1488-1611) and the Fort Lee translator (TR 1612-1725) by setting up systems of the same model in the hearing room. Counsel for the Bureau and Universal were afforded an opportunity to cross-examine Mr. Turro on the function of the TC-8 systems and on the demonstrations, and they did so.

b) TC-8 remote control arrangement for remote control of the Monticello station

63. The 56 Kbps landline connecting the Dumont studio to the Monticello station has two purposes, carriage of the programming on a wide audio channel from the Dumont studio for broadcast by the Monticello station, and carriage of telemetry between both ends of the TC-8 remote control system for control of the Monticello station transmitter from the Dumont studio on a narrow data channel. (TR 1504; see also T2, p. 4)

64. Initially, Mr. Turro installed a small amber strobe light and hand wrote "off-air" on it (TR 1510) in the Dumont studio as part of the TC-8 remote control arrangement for the Monticello station transmitter and attempted to connect it in such a way that if the landline connection between the Dumont studio and the Monticello station transmitter failed, or if the Monticello station transmitter went off the air, the light would flash and warn the Dumont studio staff of a problem. (TR 1504-1505) Mr. Turro used the same strobe light in the demonstration in the hearing room which had been installed in the Dumont studio. (TR1496-1497)

65. Mr. Turro had never installed such a facility before and he learned that the strobe light would flash in the event that there was trouble on the narrow data channel, even though the broader audio channel carrying the program feed would be functioning properly and the Monticello station transmitter's transmissions would also be functioning properly. (Ibid.) Mr. Turro also came to learn that the operation of the data path itself was unreliable, which would cause the strobe light he had installed to flash sporadically, even though at all times the program feed from the Dumont studio to the Monticello station transmitter, and the transmitter itself, were operating properly. (TR 1505-1506; TR 1510; TR 1546)

66. As part of Mr. Turro's demonstration in the hearing room of the operations of the Dumont studio-Monticello station TC-8 system, he demonstrated that the data channel could be "shorted out," causing the strobe light to flash,[5] but that power at the transmitter would be uninterrupted, showing that the flashing strobe in the Dumont studio did not indicate that the Monticello station had stopped transmitting. (TR 1514-1517)

67. Mr. Turro testified that the program line between the Dumont studio and the Monticello station transmitter has never been interrupted, except for two specific instances when the telephone company lines were damaged. (TR 1580-1582) He also testified that during the entire period of time that Jukebox Radio has supplied programming to it, the Monticello station transmitter has never lost the transmission of carrier completely, except momentarily due to the testing conducted by Mr. Loginow on April 14, 1995. (TR 1579)

68. During the course of his demonstration in the hearing room, Mr. Turro showed that the numbering and functions of the TC-8 status lights did not necessarily correspond to the numbering and functions of the TC-8 channels; for example, that status light number 1 might have no relationship to the function of channel number 1. (TR 1525-1527; 1532-1534) The demonstrations in the hearing room generally showed that the status lights and functions of each of the TC-8 remote control systems for the Monticello station and for the Fort Lee translator were substantially different from each other, even though the TC-8 systems were identical models. (compare TR 1488-1611 to 1612-1725)

69. Mr. Turro also testified that he had installed an "outboard safety button" so that it

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[5]Mr. Turro used the exact same strobe light in the hearing room which had been in use in the Dumont studio. (TR 1496-1497)

would have been necessary to push two buttons to turn off the Monticello station transmitter from the Dumont studio, preventing shut down by accidentally pushing one button. (TR 1535; 1568)

70. The Monticello station transmitter never had the capability to have its power raised or lowered remotely, meaning adjust or change power rather than turn the transmitter on or off. (T1, p. 10; TR 1537-1538; 1542; T2, p. 4) That particular model of transmitter had built into it "automatic power control" so that remote adjustments to its power could not be performed. (TR 1540)

71. On July 6, 1995, the landline carrying programming from the Dumont studio to the Monticello station was cut, causing a loss of program delivery to the Monticello station, which in turn resulted in dead carrier being heard on the air from the Monticello station and from the Fort Lee and the Pomona translators. (TR 1582; 1587-1588) Mr. Hurst was with Mr. Turro on July 6, 1995, because he was inspecting the facilities as part of his preparations for responding to Mr. Goldstein's June 1995 letter, and therefore Mr. Hurst also personally observed that when the landline was cut, the Monticello station and the two translators all transmitted dead carrier. (TR 1588-1594; 1869-1870)

72. Mr. Turro testified to a second landline cut six to twelve months later, which again resulted in the interruption of the delivery of Jukebox Radio programming from the Dumont studio to the Monticello station for one to two hours. During that interruption, the Monticello station and the Fort Lee and the Pomona translators transmitted dead carrier as had happened previously on July 6, 1995. (TR 1595) Mr. Turro testified that during the second landline cut, Mr. Spicka was called to the Monticello station and played music tapes from the Monticello

station studio, restoring programming to the Monticello station and the Fort Lee and the Pomona translators. (TR 1611)

c) TC-8 remote control arrangement for remote control of the Fort Lee translator

73. There was a TC-8 remote control system between the Dumont studio and the Fort Lee translator of the same model as the system for remote control of the Monticello station, but completely separate from it and with different functions. Over time, installations at the Fort Lee translator included: several different antennas to receive signals off the air from the Monticello station and from the Pomona translator, a main and an auxiliary transmitter, a main and auxiliary transmitting antenna, and while it was in operation, receive facilities for WMG-499. The TC-8 system between the Dumont studio and the Fort Lee translator allowed Mr. Turro to switch remotely among those facilities (T1, p. 10; TR 1613-1616), but it did not permit remote adjustments to the power of the Fort Lee translator transmitter. (T1, p. 10; T2, p. 4)

74. During the time when WMG-499 was in operation, from the time when the Monticello station went on the air until early July, 1995 when WMG-499 was turned off, Mr. Turro used WMG-499 to carry the remote control telemetry from the Dumont studio to the Fort Lee translator (T1, pp. 11-12) and the Fort Lee translator's FM subcarrier carried the telemetry from the Fort Lee translator to the Dumont studio. (TR 1707-1708) Since the time that WMG-499 was deactivated, Mr. Turro has used a 9600 baud telephone circuit to carry the remote control telemetry between the Dumont studio and the Fort Lee translator. (T1, p. 13)

75. Mr. Turro testified that he maintained an audio path carrying the Jukebox Radio programming on WMG-499 at all times. Mr. Turro testified that he kept WMG-499 in operation

continuously because its facilities could have been damaged by being turned on and off frequently and to provide constant telemetry. Mr. Turro also testified that he placed the Jukebox Radio audio on it constantly so that the WMG-499 signal could be identified easily by third parties concerned with frequency congestion in the New York City area but that he never caused that audio path to provide programming to the Fort Lee translator transmitters, except for emergencies. (T1, p. 12)

76. Mr. Turro testified that the TC-8 remote control system allowed him the ability to switch to use of audio from WMG-499 for the insertion of 30 second announcements and emergency messages. (T1, pp. 10-11) In addition, Mr. Turro explained that during the time that WMG-499 was in operation, he had two means of taking remote control the Fort Lee translator from the Dumont studio. The primary way was to use the TC-8 unit, which had its telemetry carried on the data channel on WMG-499. The second way was a failsafe which Mr. Turro had programmed, so that in the event that the telemetry path on WMG-499 was interrupted, the control system at the Fort Lee translator would home immediately onto the audio path on WMG-499 and rebroadcast that signal. (T1, pp. 12-13)

77. Mr. Turro testified that at all times relevant, the status lights on the TC-8 unit in the Dumont studio used to control the Fort Lee translator remained unchanged in their functions. He stated that he had arranged them so that the first column of lights, one through four, showed transmitter functions, and the other column, five through eight, showed receiver functions, in the following configuration:

TC-8 STATUS LIGHTS

1. Main transmitter on air
2. No function
3. No function
4. Back up transmitter on air
5. Pomona translator on air
6. Microwave on air
7. Broadcast loop on air
8. Pomona audio failure

(T1, pp. 17-18; TR 1649-1652) Mr. Turro explained that if no lights were lit in the column of lights five through eight, then that condition indicated that the Fort Lee translator was receiving the signal of the Monticello station. (TR 1650-1651) As was the case for the Monticello station transmitter, the main transmitter at the Fort Lee translator could not have its power adjusted remotely. (TR 1652-1653)

C The intercity microwave relay station WMG-499

78. WMG-499 had been licensed to Mr. Turro for use in association with the Fort Lee translator, with the transmitter located at the Dumont studio operating on 951 MHz with unlimited operation (MMB9, p. 155) and the use proposed to be provision of 30 second announcements and operational communications from the address of the Dumont studio to the Fort Lee translator. (MMB9, p. 151)

79. As noted above, WMG-499 was in operation between the Dumont studio and the Fort Lee translator from the time that the Monticello station went on the air until its operation was terminated in early July 1995 (T1, pp. 11-12), pursuant to direction of the Commission in June 1995. (MMB8, pp. 120-121) The WMG-499 transmitter was located at the Dumont studio with 18 inch by 36 inch grid antennas located at the Dumont studio and at the Fort Lee translator for transmission and reception, respectively, of WMG-499. (T34)

80. Jukebox Radio has a cooperative arrangement with the Bergen County Office of Emergency Management, by which Jukebox Radio would be its broadcast information outlet for the Bergen County area. (T1, p. 11; T3) Because of this public service, Mr. Turro maintains the ability to provide programming directly to the Fort Lee translator from the Dumont studio in the event that emergency conditions require announcements on the air. (T1, p. 11)

81. One of the reasons Mr. Turro maintained WMG-499 was to allow him to place emergency messages on the Fort Lee translator in the event that such messages were necessary at a time that the regular program feed between the Dumont studio and the Monticello station had also been interrupted. Mr. Turro testified that he did not keep records of the provision of emergency messages, but that during the entire time that the Monticello station was on the air and that WMG-499 was in operation, the direct programming capability of WMG-499 had never been used for any purpose except for the provision of emergency messages. (T1, pp. 10-11) From October 1994 to its deactivation, WMG-499 was used no more than five times to provide emergency programming but it might have never been so used. (T1, pp. 10-11; TR 2107-2108)

82. When WMG-499 was deactivated, Mr. Turro replaced the remote control carriage functions of WMG-499 with a 9600 baud data telephone line circuit. (T1, p. 13) Mr. Turro also maintained an 8 kHz circuit which could be used to insert spoken emergency messages from the Dumont studio onto the signal of the Fort Lee translator, although that circuit has never been used. (T1, p. 12)

83. Audio quality of programming carried on an 8 kHz circuit would be degraded. (T1, p. 12; TR 1875-1876)

84. A 9600 baud line is not of sufficient bandwidth to provide acceptable quality audio.

(T2, p. 5)

D The Fort Lee translator

85. The Fort Lee translator is housed in the Mediterranean Towers apartment building in Fort Lee, New Jersey, a building 26 stories tall. (T2, p. 1; T1, p. 6) The Commission granted a license for the Fort Lee translator to Mr. Turro in March 1986. (MMB21, p. 381 and MMB22, p. 456)

86. At the time that the Monticello station first went on the air in late October, 1994, Mr. Turro adjusted the receiving equipment at the Fort Lee translator to receive the signal of the Monticello station directly off the air from its authorized frequency of 99.7 MHz. (T1, p. 5; see also T2, pp. 4-5; TR 1888-1889)

87. Mr. Turro previously had located an area about four feet square on the roof of the Mediterranean Towers, called a "hot spot," from which he was able to receive the signal of the Monticello station directly off the air using nothing but a digital Sony car radio, Model XR2500 and a car antenna. (T32, pp. 1-2) Mr. Hurst also testified to the existence of the hot spot, which he personally observed in July 1995, and again in October 1997, and from which he heard the Monticello station off the air. (T35 p. 2) Mr. Loginow also heard the Monticello station off the air from the hot spot on August 2, 1995. (T1, p. 25; MMB16, p. 260) Mr. Hidle also observed the hot spot in October 1997 and he personally heard the Monticello station off the air, free from interference from WBAI by listening from a radio receiving from the hot spot. (T36, p. 2; see also video tape associated with T2)

88. Mr. Turro installed a Yagi-type antenna in the hot spot for permanent reception of the Monticello station. He also purchased from Microwave Filter Company its model 2903 Phase

Canceller (pictures of which are T40) to eliminate interference from first adjacent station WBAI, New York, New York (99.5 MHz). (T32, p. 2) Operation of the Phase Canceller required the installation of a second antenna at the Fort Lee translator location. One antenna received the Monticello station off the air and the other one received the signal of WBAI off the air. Mr. Turro made these installations in accordance with the manufacturer's instructions. (T32, p. 2; TR 1723-1724).

89. The Phase Canceller in question was manufactured, sold or shipped in October 1994. (TR 2111; TR 1910-1911)

90. Mr. Turro stated that this arrangement provided for the reception of an adequate signal from the Monticello station at the Fort Lee translator and it was used continuously from late October, 1994, to mid-January, 1995, when he caused the Fort Lee translator to receive the signal of the Pomona translator off the air on a regular basis. (T32, p. 2)

91. Mr. Turro stated that he listened to the Fort Lee translator signal at least daily. During the period of time from late October, 1994, to mid-January 1995, the signal quality was adequate but he had to go to the Fort Lee translator approximately once a month to make minor adjustments to the Phase Canceller in order to keep the signal quality adjusted. (Ibid.) Such adjustments were made by using small adjustment knobs built into the Phase Canceller. (TR 2111-2112; TR 1930-1931; T40)

92. In the Spring of 1995, Mr. Turro replaced the Phase Canceller with a 40 dB notch filter. (T32, p. 3) He explained that he did this to avoid the need for occasional adjustments and that there was no significant change in reception quality as between the Phase Canceller and the 40 dB notch filter. (Ibid.) Mr. Hurst saw this 40 dB notch filter in place when he inspected the

Fort Lee translator on July 6, 1995. (T35, p. 2; T32, pp. 3-4)

93. In late July, 1995, Mr. Turro replaced the 40 dB notch filter with a linked pair of 30 dB notch filters. (T32, p. 4) Mr. Turro observed no change in signal quality due to this change in filtering devices. (Ibid.) Mr. Turro testified that the connected pair of 30 dB notch filers were in place and were observed by Mr. Loginow during his inspection on August 2, 1995. (Ibid.) Those filters also were in place when Mr. Hurst and Mr. Hidle inspected the Fort Lee translator in October 1997. (T35, p. 2) Mr. Turro testified that the facilities of the Fort Lee translator have been essentially unchanged between August 2, 1995, when Mr. Loginow inspected the station to the present. (T32, p. 4) The Fort Lee translator's equipment, including the linked 30 dB notch filters and the equipment room, were shown in the video tape associated with Mr. Hurst's Statement (T2).

94. Mr. Turro testified that during a period of months in 1995, including May 15, 1995, he received the Pomona translator signal at the Fort Lee translator by means of an antenna in the basement of the Mediterranean Towers. He followed this practice because the receive antenna he had been using on the roof of the Mediterranean Towers had been vandalized. (T1, pp. 22-23) Mr. Hurst (T35, p. 3) testified to the strong signal from the Pomona translator which may be received in the basement of the Mediterranean Towers where Mr. Turro had located an antenna, and that reception is demonstrated in the videotape associated with Mr. Hurst's Statement (T2) which shows an inexpensive portable radio receiving the Pomona translator signal (94.3 MHz) in the basement. (See also T7, p. 4)

E The Pomona translator

95. At the time that the Monticello station went on the air, Mr. Turro and Mr. Weis

jointly owned the Pomona translator. The Pomona translator did not begin retransmitting the signal of the Monticello station until after Mr. Weis had transfered his interest in the Pomona translator, which occurred in mid-January, 1995. (T1, pp. 4-5, 8)

96. At all relevant times, the Pomona translator has been able to receive an adequate signal from the Monticello station and the Fort Lee translator has been able to receive an adequate signal from the Pomona translator without any need for filtering. (See T32, p. 4; T2, Attachment B, p. 3; T7, pp. 3-4)

III FINDINGS ON THE ENGINEERING ISSUES

A The relevant Commission Rules

97. Section 74.531(a) of the Commission's Rules provides in pertinent part:

> An aural broadcast STL station is authorized to transmit aural program material between the studio and transmitter location of a broadcasting station, except international broadcasting stations, for simultaneous or delayed broadcast.

98. Section 74.531(b) of the Commission's Rules provides in pertinent part:

> An aural broadcast intercity relay station is authorized to transmit aural program material between broadcasting stations, except international broadcasting stations, for simultaneous or delayed broadcast.

99. Section 74.531(c) of the Commission's Rules provides in pertinent part:

> An aural broadcast station intercity relay station is authorized to transmit aural program material between noncommercial educational FM stations and their co-owned noncommercial educational FM translator stations assigned to reserve channels (Channels 201 220) and between FM radio stations and FM translator stations operating within the coverage contour of their primary stations.

100. Section 74.531(f) of the Commission's Rules provides in pertinent part:

> Multiplexing of the STL or intercity relay station may be employed to provide additional channels for the transmission of....operational communications...

101. Section 74.1231(b) of the Commission's Rules provides in pertinent part:

An FM translator may be used for the purpose of retransmitting the signals of a primary FM radio broadcast station or another translator station which have been received directly through space, converted, and suitably amplified.

102. Section 74.1231(f) provides in pertinent part:

A locally generated radio frequency signal similar to that of an FM broadcast station and modulated with aural information may be connected to the input terminals of an FM translator for the purpose of transmitting voice announcements. The radio frequency signals shall be on the same channel as normally used off-the-air signal being rebroadcast. Connections of the locally generated signals shall be made by automatic means when transmitting originations concerning financial support. The connections for emergency transmissions may be made manually.

103. Section 74.1231(g) provides in pertinent part:

The aural material transmitted as permitted in paragraph (f) of this section shall be limited to emergency warnings of imminent danger and to seeking or acknowledging financial support deemed necessary to the continued operation of the translator. Originations concerning financial support are limited to a total of 30 seconds an hour. Within this limitation the length of any particular announcement will be left to the discretion of the translator station licensee...

Emergency transmissions shall be no longer or more frequent than necessary to protect life and property.

B The Fort Lee translator's direct reception of the Monticello station

1) The transmission characteristics of the Monticello station have been unchanged except for temporary periods when it was forced to operate at reduced power, including in April 1995 when its antenna had been damaged by lightning

104. Mr. Hurst testified that to his knowledge the Monticello station had maintained the same transmitting characteristics at all times, except for a period of time when there had been damage to the antenna from a lightning strike; and the replacement of the Monticello station antenna necessary to repair that damage did not change the effective radiated power of the

station. (TR 1865)

105. Mr Hurst testified that at the time that Mr. Loginow conducted his April 1995 inspections, the Monticello station was operating at reduced power as a consequence of a lightning strike to its antenna, and that Mr. Hurst's firm had filed appropriate notification with the FCC as to that reduced power operation. (TR 1859-1860; T37 and T37A) Mr. Turro confirmed that in April 1995, the Monticello station antenna had been struck and damaged by lightning, causing transmission power to be reduced. (T1, p. 28)

106. Mr Hurst testified that, in his opinion, it is possible that the reduced power operation of the Monticello station in April 1995 could have degraded the audio quality heard from the Fort Lee translator. (TR 1861)

107. Mr. Loginow stated that during his April 13, 1995 inspection of the Monticello station, he had been informed that the antenna had been damaged by a lightning strike. (TR 543-544) At that time, he had observed that the operating power of the Monticello station was reduced. (MMB16, p. 255) Mr. Loginow agreed that a significantly reduced power operation by the Monticello station could result in a degraded signal heard from the Fort Lee translator. (TR 555-557)

2) The facilities at the Fort Lee translator for reception of the Monticello station remained essentially unchanged

108. Mr. Turro testified that the Fort Lee facilities remained essentially unchanged throughout the period of time it has been retransmitting the signal of the Monticello station, with the exception being the changes in filter devices: changes from the Phase Canceller, to the 40 dB notch filter to the linked pair of 30 dB notch filters, and Mr. Turro testified that these changes in

filtering had no material effect. (See T32, pp 3-4)

109. Similarly, Mr. Hurst testified that although filtering would improve the reliability of reception "slightly," there would have been no material change in the ability of the Fort Lee translator to receive the Monticello station. (TR 1863-1865) Mr. Hurst explained:

> In my judgment, no, it did not affect the ability to receive. You have to remember that you don't need a filter. You can stand on the roof and you can receive Monticello with the Sony radio, and a simple dipole antenna without interference from the adjacent Channel WBAI. (TR 1864)

3) Actual experience with reception of the Monticello station at the Fort Lee translator

110. Mr. Turro testified that before the Monticello station went on the air, he was confident that an antenna at the Fort Lee translator would be able to receive the Monticello station signal off the air. He came to this conclusion based upon his own actual testing from the roof of the Mediterranean Towers. Mr. Turro used a battery powered Sony receiver and swept the roof of the Mediterranean Towers listening for the transmissions of stations already in operation which were weaker than the Monticello station would be, but were in the same general direction from Fort Lee as Monticello and transmitted stereo signals, while the Monticello station would be monaural. One such station was transmitting on 99.3 MHz, a first adjacent frequency to WBAI. (T1, p. 5; T32, pp. 1-2)

111. Mr. Turro, Mr. Hurst and Mr. Hidle have all observed and demonstrated reception of the Monticello station from the roof of the Mediterranean Towers. (T32, pp. 1-2; MMB8, pp. 128-129; T35 p. 2; T36, p. 2; see video tape associated with T2; see audio tapes T30) Mr. Hurst testified that the Monticello station signal can be received from any part of the Mediterranean Towers roof if filtering is used to screen out the first adjacent channel interference from WBAI,

and with no filtering at all if received from the hot spot. (Tr 1864) Mr. Loginow also heard the Monticello station off the air from the hot spot on August 2, 1995. (T1, p. 25; MMB16, p. 260) The testimony of both Mr. Turro and Mr. Hurst demonstrates that the hot spot has been stable for approximately three years based upon their actual observations.

C Corroborative testimony

1) FCC Field Engineer Serge Loginow, Jr.

a) April 14, 1995 testing

112. As Mr. Loginow described it contemporaneously to his colleagues at the Commission in his Radio Station Inspection Report, on April 14, 1995, while WMG-499 was active, he determined that the Fort Lee translator was receiving its programming off the air from the Pomona translator, and he determined that the Pomona translator was receiving programming off the air from the Monticello station. (MMB 16, p. 254) Mr. Loginow observed that the audio quality of the Fort Lee and the Pomona translators were "degraded due to splatter from WBAI" which, he reported, Mr. Turro attributed to a recent lightning strike to the Monticello station antenna. (MMB16, pp. 254-255)

113. Mr. Loginow testified that he reached these determinations by testing, as follows. On the previous day (April 13, 1995), while at the Monticello station transmitter, he arranged with Mr. Blabey to have an engineer stationed at the Monticello station transmitter to receive his call and turn the transmitter on and off as directed and Mr. Loginow took the telephone number of the transmitter site. (MMB18, p. 331-332) On April 14, 1995, Mr. Loginow drove an FCC vehicle to a location on Route 9 in New Jersey where he could receive the signals of both the Pomona and the Fort Lee translators. From that vehicle, Mr. Loginow used a cellular telephone

to call the Monticello station transmitter site as he had arranged with Mr. Blabey. (MMB18, p. 332)[6] After identifying himself to the engineer at the transmitter, Mr. Loginow directed him to "kill it," meaning turn the transmitter off. (Ibid.) Nearly instantaneously (TR 344), the programming that Mr. Loginow had been hearing from the Pomona translator and the Fort Lee translator was replaced by "white noise" on the translators' frequencies. (MMB18, p. 332; TR 344) Hearing white noise, which Mr. Loginow described as a hissing sound (TR 345), "was consistent with the [Monticello station] transmitter being turned off and a resulting in the loss of the over-the-air signal by the translators." (MMB18, p. 332) Therefore, Mr. Loginow testified that on April 14, 1995, he determined, to "a high degree of assurity," that the Fort Lee translator was receiving Jukebox Radio programming off the air from the Pomona translator and that the Pomona translator was receiving Jukebox Radio programming off the air from the Monticello station. (TR 345-346) Mr. Loginow then instructed the engineer at the transmitter site to turn the transmitter back on and Jukebox Radio programming returned to the Pomona translator and Fort Lee translator "almost instantaneously." (TR 346)

114. Mr. Loginow, therefore, testified that on April 14, 1995, the Pomona translator and Fort Lee translators passed the test. (TR 346)

b) April 14, 1995 inspection of the Dumont studio

115. Mr. Loginow testified that after this testing, he inspected the Dumont studio, where he asked to see the remote control equipment for the Monticello station. (MMB18, p. 333) Mr.

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[6]Mr. Blabey testified that he had retained George Spicka as the engineer to turn the transmitter on and off for Mr. Loginow. (TR 964-965) At the hearing, Mr. Loginow could not remember the engineer's name but agreed that it could have been George Spicka. (TR 343)

Loginow visited the Dumont studio for about ten minutes or less. (TR 347) He observed the Monticello station remote control equipment but did not inspect or test it. (MMB18, p. 333; TR 348)

c) July 31, 1995 observations

116. On July 31, 1995, at the request of the FCC, Mr. Loginow returned to the vicinity of Fort Lee. He monitored 951 MHz, the frequency of WMG-499, and determined that it was not in operation. (MMB16, p. 259; TR 380) Mr. Loginow reported the results of his July 31, 1995 observations to personnel of the Commission's Wireless Telecommunications and Mass Media Bureaus, including Stephen Barone, by an e-mail dated August 1, 1995. (MMB18, 334-335; MMB16, p. 259)

117. In the same e-mail, Mr. Loginow stated that the sound quality of the Fort Lee translator indicated that the programming was not being received off the air, but from some other alternate means, "presumably via telephone lines." Mr. Loginow reached his assumption on July 31, 1995 about the possible use of "alternate means" of program delivery based upon the high audio quality he heard that day in comparison to the lesser audio quality he remembered hearing previously in April. (TR 382-383) Mr. Loginow performed no investigations or otherwise looked for an "alternate means" of program delivery. (TR 382) Mr. Loginow also thought that the high audio quality of the Fort Lee translator he observed on July 31, 1995 was consistent with the audio quality he observed on May 15, 1995. (TR 383)

d) August 2, 1995 inspections and testing

118. Mr. Loginow returned to Fort Lee on August 2, 1995 to inspect the Fort Lee translator. (MMB18, p. 334; TR 387; MMB16, p. 260) Mr. Loginow called Mr. Turro on the

telephone and informed him that he wanted to inspect the Fort Lee translator. (MMB18, p. 334; TR 387) Mr. Loginow had given no advance notice to Mr. Turro of this inspection. (TR 387) Mr. Loginow met Mr. Turro at the Fort Lee translator shortly after calling him. (TR 387)

119. Mr. Loginow testified that on August 2, 1995 he again perceived the audio quality of the Fort Lee translator transmissions to be very high. (MMB16, p. 260; TR 387-388)

120. Mr. Turro cooperated fully with Mr. Loginow during his inspection of the Fort Lee translator. (TR 387; T27, p. 3) Mr. Loginow inspected as he saw fit. (TR 387)

121. Mr. Loginow's August 2, 1995 investigations included inspection of the roof of the Mediterranean Towers, where antennas were mounted, and the actual translator station equipment two floors below. (TR 390-392)

122. August 2, 1995 was the only day that Mr. Loginow observed the transmitters, electronics, power source and receivers of the Fort Lee translator. (TR 389; 399-400)

123. During his inspection of the Fort Lee translator, Mr. Loginow observed a Sony car radio tuned to the frequency of the Pomona translator and that the audio from that radio was being supplied to the Fort Lee translator's transmitter. (MMB18, pp. 334-335)

124. Mr. Loginow testified that on August 2, 1995, while inspecting the Fort Lee translator, he conducted a test to determine if it was receiving its programming off the air from the Pomona translator by deactivating the receiver picking up the Pomona translator signal and observing that simultaneously the Fort Lee translator lost its output on 103.1 MHz, and, therefore, he determined that the Fort Lee translator was receiving its programming off the air from the Pomona translator. (MMB16, p. 260; TR 389; TR 393-394)

125. Mr. Loginow testified that on August 2, 1995, the Fort Lee translator passed the

test. (TR 389-390; TR 392)

126. While inspecting on August 2, 1995, Mr. Loginow observed that at the Fort Lee translator he was able to receive "moderately good audio" directly off the air from the Monticello station on its frequency of 99.7 MHz. (MMB16, p. 260; TR 390-391) Mr. Loginow also observed "a consistent high quality audio signal off the air" from the Pomona translator. (MMB16, p. 260)

127. During his inspection on August 2, 1995, Mr. Loginow observed no means of program delivery to the Fort Lee translator other than off the air reception. (TR 389-390)

128. After concluding his inspection of the Fort Lee translator, Mr. Loginow accepted Mr. Turro's invitation to inspect the Pomona translator and drove to the Pomona translator in Mr. Turro's car. (MMB16, p. 260; TR 394-395)

129. On August 2, 1995, Mr. Loginow inspected the Pomona translator to the extent that he saw fit. (TR 395) Mr. Turro cooperated fully with Mr. Loginow's inspection of the Pomona translator on August 2, 1995. (TR 395; T27, p. 3)

130. August 2, 1995, was the only day that Mr. Loginow observed the electronics and other facilities of the Pomona translator. (TR 399-400)

131. During his inspection on August 2, 1995, Mr. Loginow observed no means of program delivery to the Pomona translator other than off the air reception. (TR 395)

132. Mr. Loginow conducted testing of the Pomona translator similar to that performed at the Fort Lee translator. (MMB16, p. 260; TR 395) On August 2, 1995, while inspecting the Pomona translator, Mr. Loginow listened to its transmission on 94.3 MHz while the radio receiver bringing in its programming was turned down, and Mr. Loginow observed that the

programming on the Pomona translator also turned down, and then returned when that receiver was turned back up again. (TR 395-396)

133. Mr. Loginow testified that on August 2, 1995, the Pomona translator passed the test. (TR 397)

134. Mr. Loginow reported the results of his August 2, 1995 inspections and testing to personnel of the Commission's Wireless Telecommunications and Mass Media Bureaus, including Stephen Barone, by an e-mail dated August 4, 1995. (MMB18, 335; MMB16, p. 260)

e) June 4, 1997 testing

135. On June 4, 1997, at the request of Mass Media Bureau personnel Alan Aronowitz and/or Stephen Barone, Mr. Loginow returned to Fort Lee for additional testing. (MMB18, p. 335; TR 397)

136. Mr. Loginow testified that on June 4, 1997, he conducted tests at the Fort Lee translator with a signal generator similar to the testing he had conducted on May 15, 1995, including the use of a signal generator which operated in basically the same way as the one he used on May 15, 1995. (MMB18, p. 335; TR 398) One difference between the two days of signal generator testing was that on June 4, 1997, Mr. Loginow used a signal generator out on the roof of the Mediterranean Towers, while on May 15, 1995 he used a signal generator within a locked enclosure at roof level. (TR 398-399)

137. Mr. Loginow testified that on June 4, 1997, from the roof of the Mediterranean Towers, he used a signal generator to transmit a signal on the frequency of the Pomona translator, 94.3 MHz, while listening to the output of the Fort Lee translator on 103.1 MHz. (MMB18, p. 335; TR 399) From that test, on June 4, 1997, Mr. Loginow determined that the

Fort Lee translator was receiving its programming off the air from the Pomona translator because he heard a reaction on 103.1 MHz to the signal he generated on 94.3 MHz. (Ibid.)

138. Mr. Loginow testified that on June 4, 1997, the Fort Lee translator passed the test. (TR 399)

139. Mr. Loginow reported the results of his June 4, 1997 tests to Mr. Aronowitz and Mr. Barone by telephone on either June 4 or 5, 1997. (TR 399)

2) Independent Consulting Engineer Herman E. Hurst

a) Relationship between Mr. Turro and Mr. Hurst

140. Mr. Hurst has represented Mr. Turro as his consulting engineer since approximately 1984. (TR 1884)

141. During his more than 35 years as a communications engineer, Mr. Hurst has made it a practice to rely upon the representations of his clients. (TR 1913) In this regard, Mr. Hurst considers Mr. Turro to be very accurate and technically qualified in broadcast matters. (TR 1916-1917)

142. Mr. Turro testified that he has never tried to mislead Mr. Hurst with respect to the circumstances of his radio operations. Mr. Turro has tried to describe radio matters to Mr. Hurst as accurately as possible, including the locations, kinds, and installations of equipment. (TR 2109) Mr. Turro believes that it is necessary to be as accurate as possible in his descriptions to Mr. Hurst to be able to obtain good engineering advice. (TR 2110)

b) Mr. Hurst's observations in July 1995

143. As reported in his sworn statement to the Commission dated July 25, 1995, Mr. Hurst personally observed that the Fort Lee translator was able to receive both the Monticello

station and the Pomona translator over-the-air. Based upon his July 1995 observations, Mr. Hurst found no alternate means of program delivery to the Fort Lee translator. He also found that WMG-499 had been deactivated. (T2, Attachment B, pp. 2-3[7])

144. As recounted in his July 25, 1995 statement, Mr. Hurst attested to the good quality of the Monticello station signal as heard by him personally at the Fort Lee translator and at the Pomona translator on July 6, 1995. (T2, Attachment B, p. 3)

145. As part of his July 25, 1995 statement, Mr. Hurst included cassette tapes demonstrating the good quality of the Monticello station signal as received at both the Fort Lee and the Pomona translators. (Ibid.)

146. Mr. Hurst's July 25, 1995 statement also informed the Commission that the Monticello station transmitted a monaural signal and it is "well documented" that such a signal will serve a much wider area than a conventional FM stereo broadcast facility "because receiver characteristics allow for much better reception of low level mono signals." (T2, Attachment B, pp.4- 5)

c) Mr. Hurst's October 16 and 17, 1997 observations

147. Mr. Hurst testified that he again inspected, and performed tests, of the Fort Lee and Pomona translators on October 16 and 17, 1997. (T2; T35)

148. Mr. Hurst testified that on October 16 and 17, 1997, he confirmed that from the roof of the Mediterranean Towers, the Fort Lee translator is able to receive the Monticello station

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[7]Attachment B to T2 is a copy of Mr. Hurst's July 25, 1995 statement which had been submitted to the Commission as part of Mr. Turro's response dated July 27, 1995 (MMB8), to Mr. Goldstein's June 21, 1995 letter of inquiry. (MMB7)

directly off the air. (T2, pp. 1-2)

149. In addition, Mr. Hurst also testified that he "verified" that the Fort Lee translator had the ability to receive a "rebroadcast quality signal" from both the Monticello station and the Pomona translator. (T2, p. 2)

150. Mr. Hurst testified that a hot spot on the roof of the Mediterranean Towers exists where good quality reception of the Monticello station is possible. (T2, p. 2)

151. Mr. Hurst testified that Mr. Turro had separate receive systems in place at the Fort Lee translator for the reception of both the Pomona translator and the Monticello station, with a wireline remote control system in place to permit selection between them from the Dumont studio. (Ibid.)

152. Mr. Hurst testified that, in his professional opinion, the testing and observations undertaken by him and by Mr. Hidle (see T2, T7, T32, T35 and T36) were valid for the period of time from the commencement of the Fort Lee translator's retransmission of the Monticello station. (TR 1862-1866)

d) Mr. Hurst's other observations

153. Mr. Hurst testified:

> While some engineers have contended that the audio quality broadcast by both translators is "too good to be true," I have undertaken a thorough investigation and determined that no other audio input is present. Indeed, the programming broadcast by the Pomona and Fort Lee translators is a directly through space reception and rebroadcast in accordance with the Rules and Regulations of the FCC. The term "received directly through space" as used in Section 74.1231 is the term meaning "off-air-pickup." This differentiates from intermediate means of feeding the program material, such as satellite, microwave or wireline. (T2, p. 4)

154. Mr. Hurst also stated that the video tape associated with his Statement (T2)

additionally demonstrated the good audio quality of Monticello station signal received at the hot spot on the roof of the Mediterranean Towers, particularly considering the use of a headset for audio output and the windy conditions on the roof during the taping. (T2, p. 2)

155. Mr. Hurst confirmed that while he was in the New Jersey-New York area inspecting the Fort Lee and Pomona translators on July 6, 1995, a cut in the landline which carried programming from the Dumont studio to the Monticello station caused an interruption in the delivery of Jukebox Radio programming to the Monticello station, which, based upon his personal observations, resulted in the loss of Jukebox Radio audio on the Monticello station, the Pomona translator and the Fort Lee translator. (TR 1869-1870)

156. Mr. Hurst testified that over time he had noted some seasonal variation in received signal quality at the Fort Lee translator, that he personally observed the audio quality during mid and late summer periods when foliage would be expected to cause the greatest path attenuation, and at such times he personally found the resulting reception to be good to excellent in quality. (T2, p. 2)

e) The hot spot

157. Mr. Hurst testified, based upon his own experience and observations, that a hot spot exists on the roof of the Mediterranean Towers from which good quality reception of the Monticello station signal is available. (T2, p. 2) The quality of the Monticello station signal at the hot spot is high enough that the Monticello station signal may be received there without the use of filtering devices. (TR 1888-1889)

158. Mr. Hurst testified that based upon his personal observations, the hot spot he observed on the roof of the Mediterranean Towers on July 6, 1995 was the same on October 16